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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,731	10/17/2003	J. Wayne Thompson	M4065.0345/P345-A	8327
24998	7590	02/06/2006	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			NGUYEN, VAN THU T	
2101 L Street, NW			ART UNIT	
Washington, DC 20037			PAPER NUMBER	
			2824	

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

A

Office Action Summary	Application No. 10/686,731	Applicant(s) THOMPSON ET AL.	
	Examiner VanThu Nguyen	Art Unit 2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33, 35 and 36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33, 35-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. This Office Action is in response to Amendment filed on December 19, 2005.
2. Claims 33, 35-36 are pending.
3. Claims 1-32, 34, 37-54 are cancelled.

Response to Arguments

4. Applicant's arguments filed December 19, 2005 have been fully considered but they are not persuasive.

Applicants argue that there is no teaching in Hamade of applying [the] I/O signals and [the] non-I/O signals such that [the] I/O signal transient portions occur only during non-transient portions of [the] non-I/O signals. Applicants also states it would not have be inherent, nor obvious to one ordinary skill in the art for such arrangement to prevent signal crosstalk and to improve signal transmission speed. Examiner disagrees with these arguments.

Hamade discloses, in FIGS. 10-11, a non-I/O line LIOEQ between every two global I/O lines GIO12, GIO11 and /GIO11, /GIO12. Equalizing signal introduced on non-I/O line LIOEQ is for equalizing two pairs of local I/O lines LIO11, /LIO11 and LIO12, /LIO12 (see column 11, line 65 to column 12, line 7). Hamade further discloses that local I/O lines pairs, global I/O lines pairs are used for data transmission, and data on the local I/O line pairs are *immediately* transmitted to global I/O line pairs (see column 12, lines 24-28). It is obvious that signals are transmitted in I/O lines and non-I/O lines during a memory access, and each signal should have a transient and a non-transient portions. *In a basic memory operation, equalizing signal is introduced/high/transient on LIOEQ only when local and global I/O lines pairs are not transmitting/transient data, and vice versa* [emphasis added].

Therefore, Hamade inherently teaches applying [the] I/O signals and [the] non-I/O signals such that [the] I/O signal transient portions occur only during non-transient portions of [the] non-I/O signals. Furthermore, purpose of “prevent signal crosstalk and to improve signal transmission speed” for such features is not recited in claims 33 and 35.

Hamade further discloses, in FIG. 2, a plurality of non-I/O lines LIOEQ1 and LIOEQ2 between every two global I/O lines GIO12, GIO11, /GIO11, /GIO12, GIO32, GIO31, /GIO31, /GIO32.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 33, 35-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamade et al. (U.S. Patent No. 5,650,975, referring as Hamade).

Regarding claims 33, 35-36, Hamade discloses, in FIG. 2, a method of operating an integrated circuit memory device, said method comprising:

providing a layer of metalized traces including a plurality of I/O traces (e.g. GIO12, GIO11, /GIO11, /GIO12 ... /GIO42);

including within said layer of metalized traces a plurality of non-I/O traces (e.g. LIOEQ1, LIOEQ2), and disposing at least one non-I/O trace between every two I/O traces (e.g. LIOEQ1 is between GIO11 and /GIO11);

introducing a first plurality of I/O signals (i.e. when read/write data are transmitted in GIO lines, signals are introduced), each of said I/O signals inherently exhibiting a transient portion (i.e. when data being transferred) and a non-transient portion (i.e. when data not being transferred), onto said plurality of I/O traces respectively;

introducing a second plurality of non-I/O signals (i.e. transmitted equalizing signals onto LIOEQ1 and LIOEQ2 to turn on/off local I/O equalizers) each of said non-I/O signals inherently exhibiting a transient portion (e.g. when equalizing signals are high) and a non-transient portion (e.g. when equalizing signals are low) onto said plurality of non-I/O traces respectively, and

inherently applying said I/O signals and said non-I/O signals such that said I/O signal transient portions occur only during non-transient portions of said non-I/O signals

It is noted that most of the claimed limitations are inherent within the method of operating the memory device because:

- (i) it would have been obvious for one with ordinary skill in the art to realize, for example, LIO11 and /LIO11 transmit read/write data to/from GIO11 and /GIO11 concurrently, LIOEQ1 transmit equalizing signal to equalize LIO11 and /LIO11 only after data have transmitted.
- (ii) any memory device is built on a substrate and a plurality of layers above it, for example, layer #1 for word lines, layer #2 for bit lines, layer #3 for local I/O lines, layers #4 for global I/O lines, etc, and it also obvious that global I/O lines should be spaced farther from substrate than local I/O lines.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VanThu Nguyen whose telephone number is (571) 272-1881. The examiner can normally be reached on Monday-Friday, 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2824

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 5, 2006



VanThu Nguyen
Primary Examiner
Art Unit 2824